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Company: United States Patent and Trademark Office

Attn: Examiner D. Flores Ruiz

Fax Number 1-703-308-7722

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FROM Deborah M. Meredith,
Assistant to Charles Berman

File Number 58062-011500

Comments Please find attached:

1. Amendment Transmittal
2. Amendment

2828

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICEApplicant: Coldren *et al*

Examiner: Flores Ruiz, D.

Serial No. 09/935,012

Group Art Unit: 2828

Filed: 08/21/2001

Docket No. 58027-011500

Title: DISTRIBUTED BRAGG REFLECTORS INCORPORATING Sb MATERIAL
FOR LONG-WAVELENGTH VERTICAL CAVITY SURFACE EMITTING
LASERS

CERTIFICATE UNDER 37 CFR 1.6(d)

I hereby certify that this correspondence and identified enclosures are being transmitted via facsimile only to Examiner Delma R. Flores Ruiz, Art Unit 2828, Facsimile No. 703-308-7722, on February 14, 2003.


Deborah M. Meredith
AMENDMENT

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BOX: PATENT APPLICATION
Commissioner for Patents
Washington, D.C. 20231

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Sir/Madam:

Responsive to the Office Action mailed November 18, 2002, kindly enter the following amendments:

IN THE SPECIFICATION

Please replace paragraph 44 with the following paragraph:

[0044] FIG. 7 is a schematic representation of another aspect of the present invention, in which an electrically-pumped, Sb-based vertical-cavity laser 30 operating at 1.55 μm is produced in a single epitaxial growth. The laser 30 employs AlGaAsSb DBRs 32 and 34 and an AlInGaAs-based active region 36, and has a room temperature threshold current density of 1.4 kA/cm^2 and an external quantum efficiency of 18%. The DBRs 28 and 30 employ a plurality of layers of semiconductor material, each alternating layer having the material composition of AlGaAsSb. In another embodiment, the DBRs 32 [28] and 34 [30] have a plurality of layers of semiconductor material, only one of which includes the element antimony (Sb).